

FIG. 1

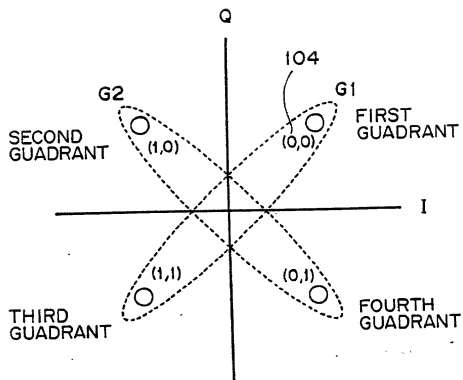


FIG. 2

- (1) IN CASE  $S_1$  AND  $S_2$  BELONG TO THE SAME GROUP
- (a)  $S_3 = \bar{S}_1$   
 $S_4$ : AN ARBITRARY SIGNAL POINT
  - (b)  $S_3 = S_1$   
 $S_4 = \bar{S}_2$
  - (c) IN CASE  $S_3$  BELONGS TO A DIFFERENT GROUP FROM  $S_1$  AND  $S_2$   
 $S_4 = S_2$
  - (d) IN CASE  $S_3$  BELONGS TO A DIFFERENT GROUP FROM  $S_1$  AND  $S_2$ 
    - (i) IN CASE  $S_1 = S_2$   
 $S_4 = \bar{S}_3$
    - (ii) IN CASE  $S_1 = \bar{S}_2$   
 $S_4 = S_3$
- (2) IN CASE EACH OF  $S_1$  AND  $S_2$  BELONGS TO A DIFFERENT GROUP
- (a)  $S_3 = S_1$   
 $S_4$ : AN ARBITRARY SIGNAL POINT
  - (b)  $S_3 = \bar{S}_1$   
 $S_4 = S_2$
  - (c) IN CASE  $S_3$  BELONGS TO THE SAME SIGNAL POINT GROUP AS  $S_2$   
 $S_4 = \bar{S}_2$
  - (d)  $S_3 = S_2$   
 $S_4 = S_1$
  - (e)  $S_3 = \bar{S}_2$   
 $S_4 = \bar{S}_1$

F I G. 3

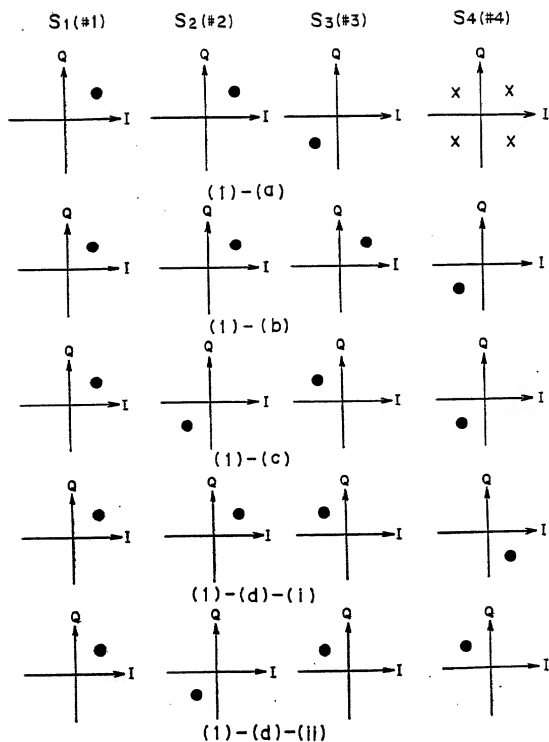


FIG. 4

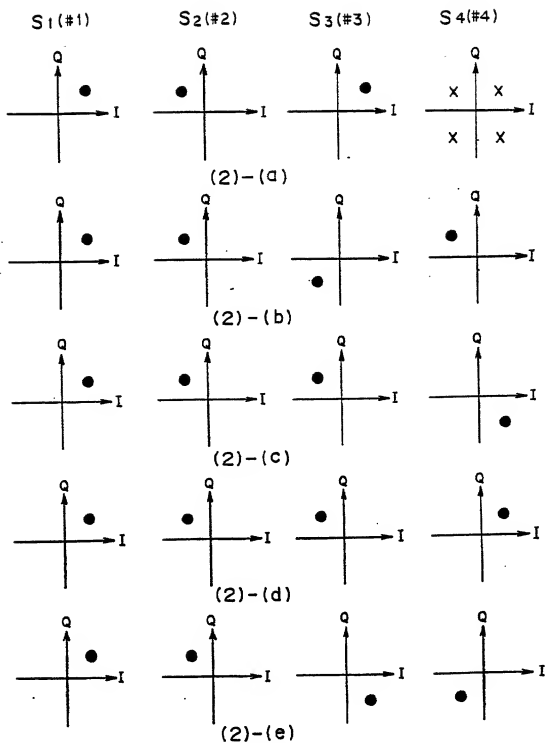


FIG. 5

PHASE CONDITIONS			NUMBER OF PATTERNS	TOTAL NUMBER OF PATTERNS
(1)	(a)		4	9
	(b)		1	
	(c)		2	
	(d)	(i)	2	
	(d)	(ii)	2	
(2)	(a)		4	9
	(b)		1	
	(c)		2	
	(d)		1	
	(e)		1	

F I G. 6

NUMBER OF SUB-CARRIERS	PEAK POWER SUPPRESSION AMOUNT [dB]
4	2.04
8	1.95
12	2.04

F I G. 7

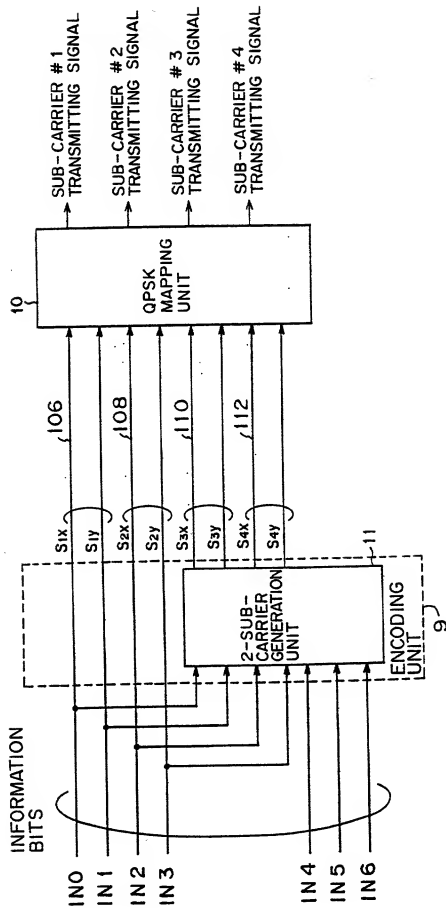


FIG. 8



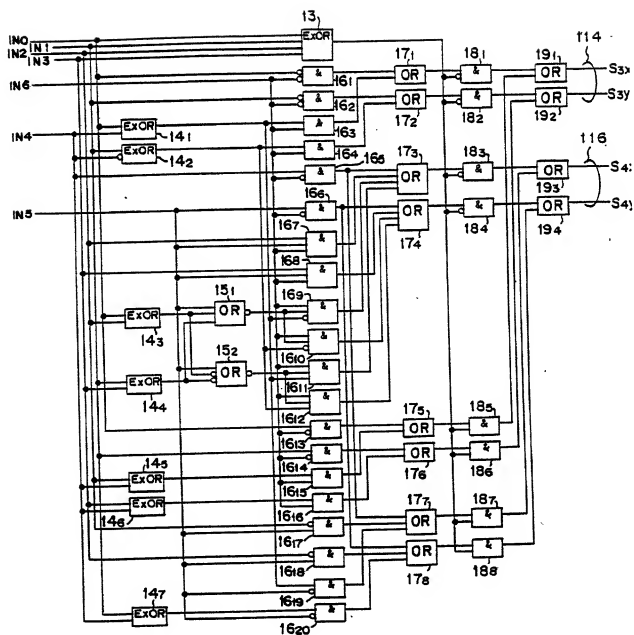


FIG. 9

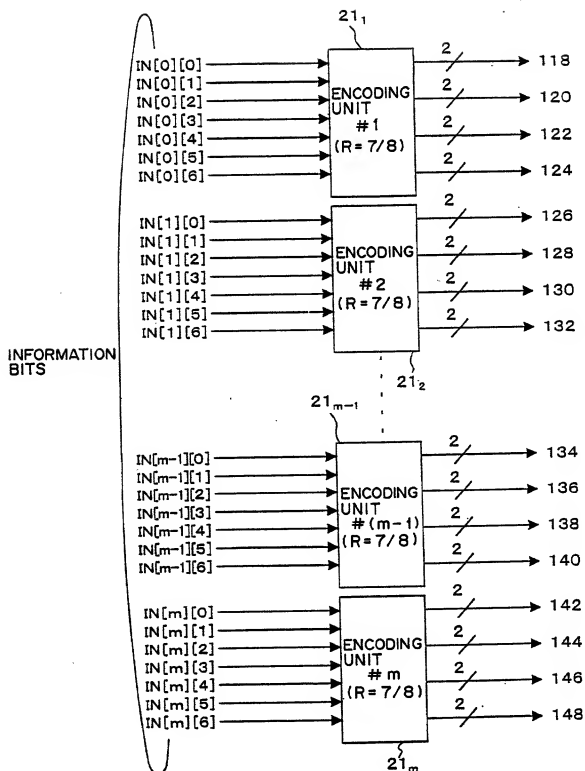


FIG. 10

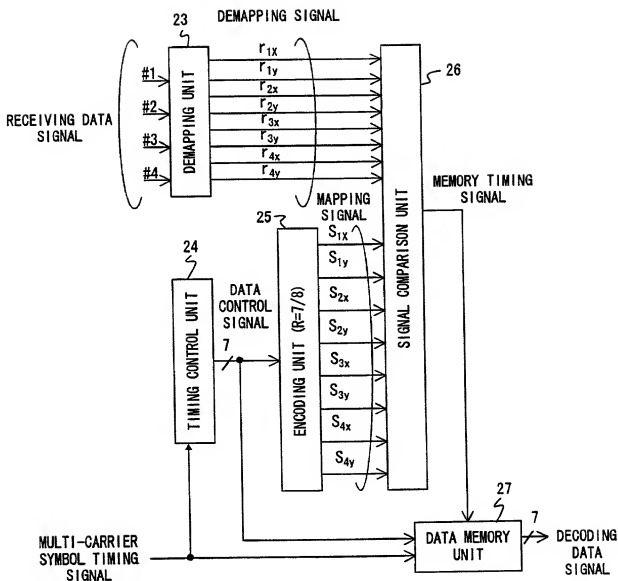


FIG. 11

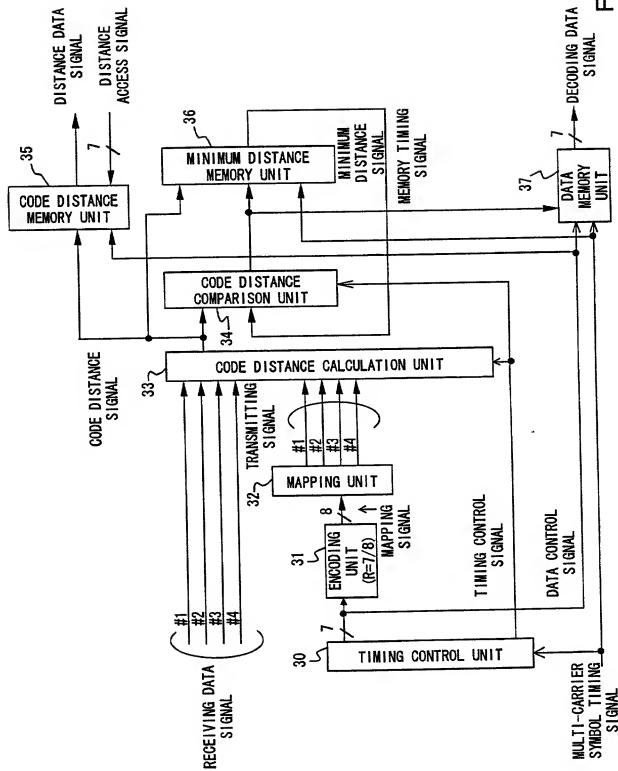
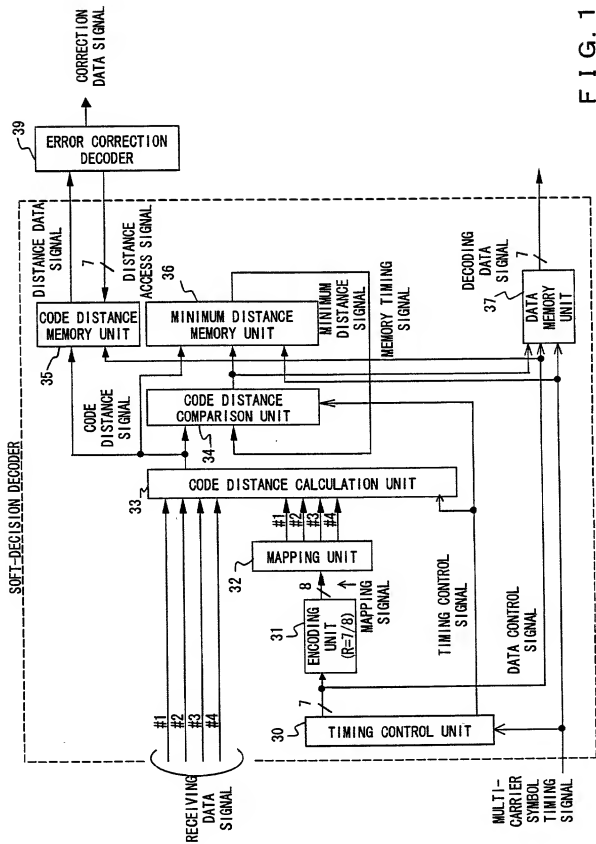


FIG. 12



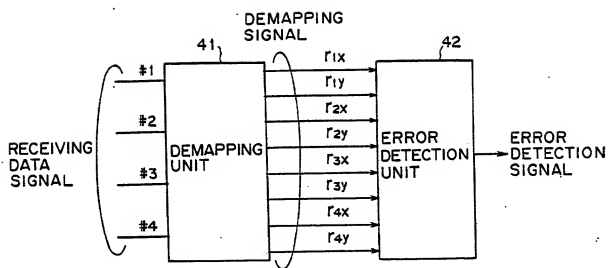


FIG. 14

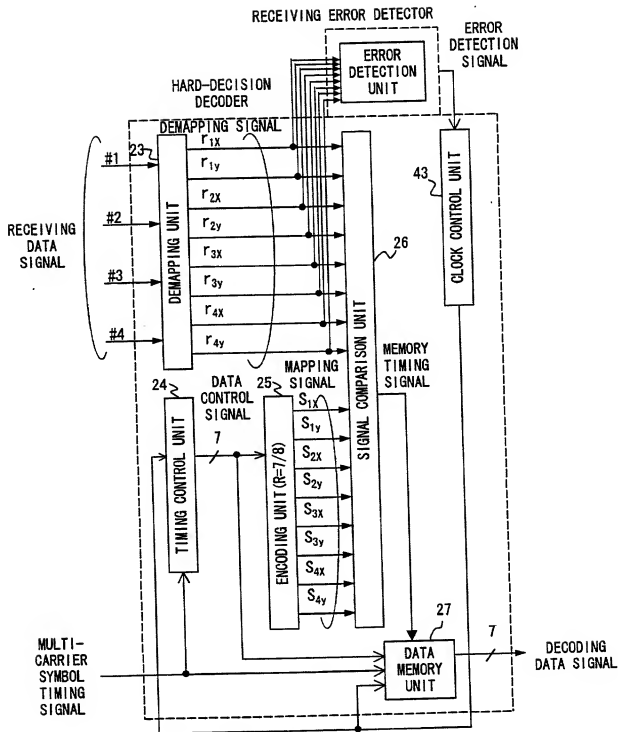


FIG. 15

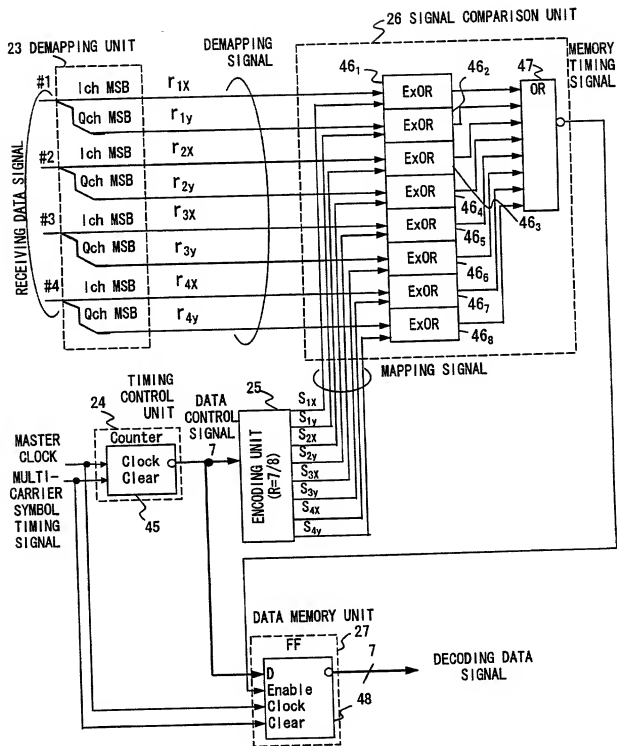


FIG. 16



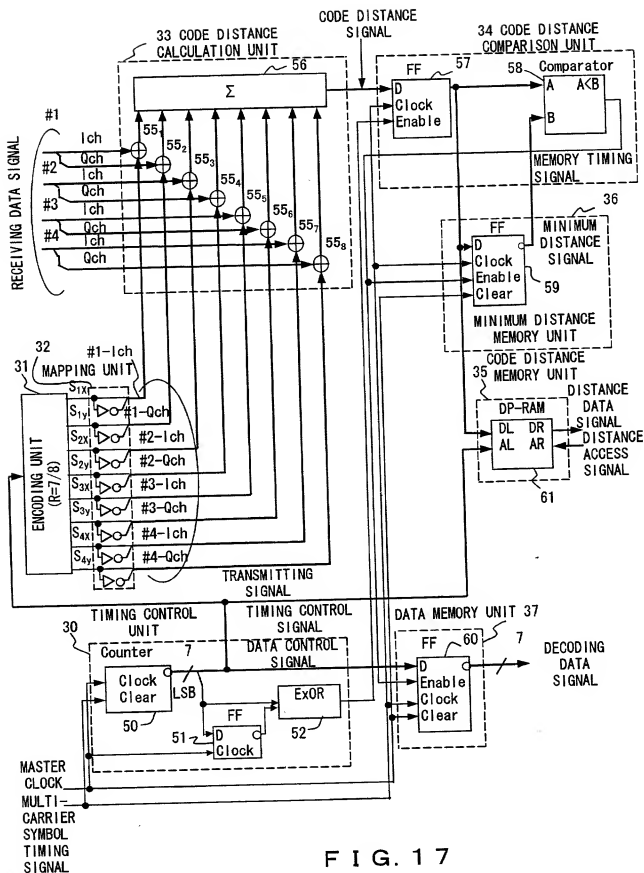
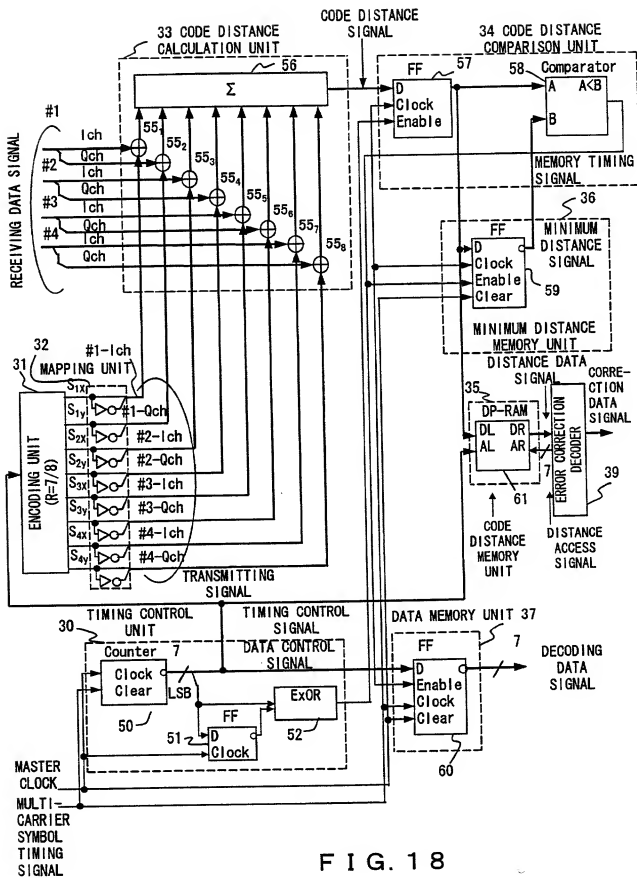


FIG. 17



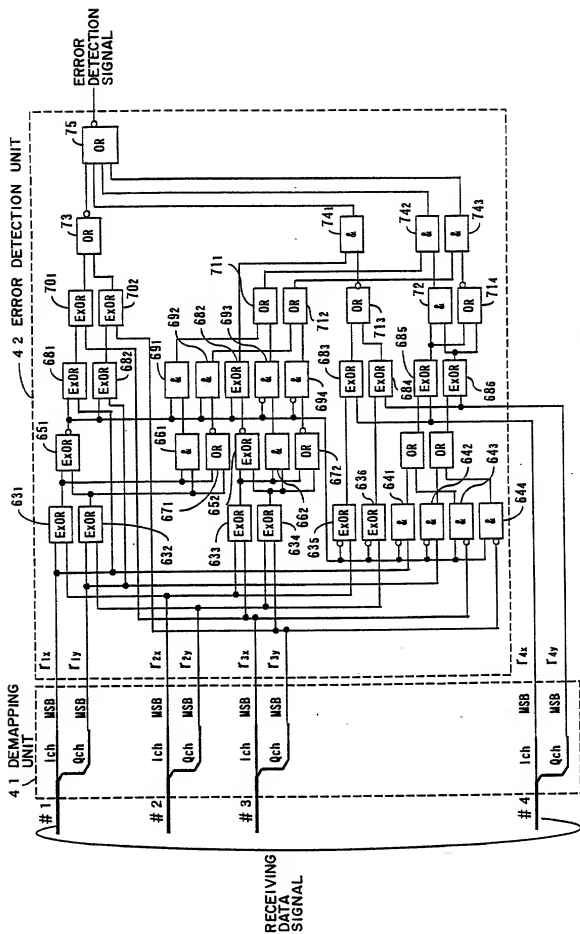


FIG. 19

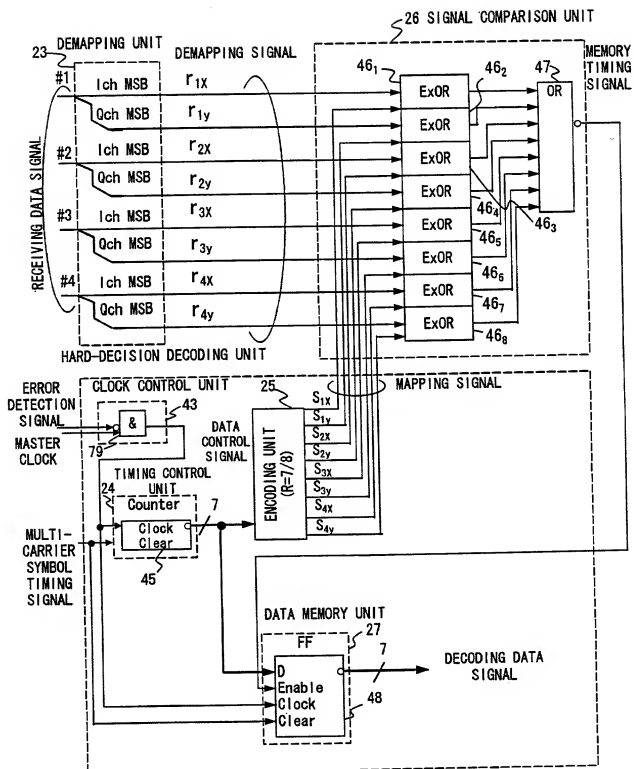
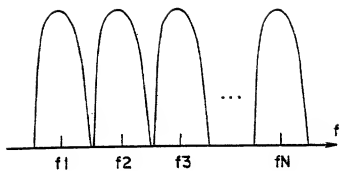


FIG. 20



MULTI-CARRIER  
MODULATION

FIG. 21



ORTHOGONAL  
FREQUENCY-DIVISION  
MULTIPLEX

FIG. 22

# EXPLANATION OF THE CODES

FIG. 1 100 . . . . . NUMBER OF BITS LESS THAN  $2n$   
 102 . . . . .  $n$  SUB-CARRIER MAPPING SIGNAL

FIG. 2 104 . . . . .  $(S_x, S_y)$  : MAPPING SIGNAL

FIG. 8 106 . . . . . SUB-CARRIER #1 MAPPING SIGNAL  
 108 . . . . . SUB-CARRIER #2 MAPPING SIGNAL  
 110 . . . . . SUB-CARRIER #3 MAPPING SIGNAL  
 112 . . . . . SUB-CARRIER #4 MAPPING SIGNAL

FIG. 9 114 . . . . . SUB-CARRIER #3 MAPPING SIGNAL  
 116 . . . . . SUB-CARRIER #4 MAPPING SIGNAL

FIG. 10 118 . . . . . SUB-CARRIER #1 MAPPING SIGNAL  
 120 . . . . . SUB-CARRIER #2 MAPPING SIGNAL  
 122 . . . . . SUB-CARRIER #3 MAPPING SIGNAL  
 124 . . . . . SUB-CARRIER #4 MAPPING SIGNAL  
 126 . . . . . SUB-CARRIER #5 MAPPING SIGNAL  
 128 . . . . . SUB-CARRIER #6 MAPPING SIGNAL  
 130 . . . . . SUB-CARRIER #7 MAPPING SIGNAL  
 132 . . . . . SUB-CARRIER #8 MAPPING SIGNAL  
 134 . . . . . SUB-CARRIER #  $(4m-7)$  MAPPING SIGNAL  
 136 . . . . . SUB-CARRIER #  $(4m-6)$  MAPPING SIGNAL  
 138 . . . . . SUB-CARRIER #  $(4m-5)$  MAPPING SIGNAL  
 140 . . . . . SUB-CARRIER #  $(4m-4)$  MAPPING SIGNAL  
 142 . . . . . SUB-CARRIER #  $(4m-3)$  MAPPING SIGNAL  
 144 . . . . . SUB-CARRIER #  $(4m-2)$  MAPPING SIGNAL  
 146 . . . . . SUB-CARRIER #  $(4m-1)$  MAPPING SIGNAL  
 148 . . . . . SUB-CARRIER #  $4m$  MAPPING SIGNAL